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## PATENT SPECIFICATION



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### COMPLETE SPECIFICATION

#### Improvements in or relating to Physical Training Apparatus

I, ANDRÉ RICHARD of 40 ~~ter~~ Avenue de Suffren, Paris, France, a French Citizen, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention has for an object a physical training apparatus adapted particularly to facilitate the practise of skiing and is of the kind in which the person has his feet fixed to two small planks or pedals connected to two pedal-cranks mounted one after the other upon a frame, both the pedal-cranks driving a wheel forming a flywheel. The person remaining in a standing position goes through the motions of pedalling from the rear to the front or reversely.

According to the present invention there is provided a physical training apparatus comprising a flywheel rotating in a vertical plane and on an axis symmetrically arranged between two parallel axes each carrying one pair of bicycle-like pedal-cranks, the two cranks on each side of the flywheel being interconnected by a rigid connecting element forming a foot platform, the cranks being connected to the flywheel to drive the latter.

A further improvement in accordance with the present invention consists in the fact that a preferably steel blade forming a spring serves for the securing of the heel upon each of the platforms in order to allow the mobility of the heel in a vertical plane relatively to said heels, said blades being preferably adjustable in position upon the platform in order to vary their elasticity.

A still further improvement consists in the provision of the frame having preferably the form of a double T constituted by two spars connected by two cross members, which frame comprises brackets of fixation with pulleys in order to associate an expander to the apparatus.

The description which follows with reference to the accompanying drawings given as an example, will explain in which manner the aforesaid improvements can be carried into effect:

Figure 1 is a view in elevation of the improved physical training apparatus;

Figure 2 is a view in plan of Figure 1.

The apparatus comprises two cranks 1 and 2 arranged in line one after the other. The axes 1a and 2a provided usually with pedals are connected to each other by a wooden or metal blade 11 similar to the form of a ski and comprising for this purpose the fasteners 14 and 15 serving to fasten the foot upon the ski.

The cranks 1 and 2 are carried by a frame which is constituted essentially by two spars 40 uniting two cross-bars 41, the whole assuming the form of a double T. Upon the spars 40 are fixed struts 42 terminating in the axle-boxes 43 in which the axles of the cranks 1 and 2 are mounted. The struts 42 are suitably cross braced at 44. The wheel 20 serving as a flywheel and driven by movement of the cranks 1 and 2 is disposed between the cranks. Its axis 45 is mounted in the cross-head guides 46 provided upon each of the cross members 44. The chains 5a and 5b driven by the wheels 3 and 4 respectively, connected to cranks 1 and 2, act upon the pinions 47 and 48 secured to the wheel 20 and disposed at each side of the latter so as to rotate therewith. Finally the wheel 20 carries upon its hub a small pulley serving to drive the kilometric or other distance recorder 49. The rubber rings 50 which are inserted upon the cross bars 41 ensure adherence of the frame to the ground.

In order to render more perfect and more efficacious the preparatory training for skiing, the mode of fixation of the feet upon the blades 11 allows the mobility of the heel relative to the platform. For this purpose the fastener 15 of each of the platforms is fixed to a steel blade 51 forming the spring and secured to the platform by means of two screws 52 engaged in the elongated slots 53 provided in the blade 51. The latter can thus be displaced towards or away from the front of the ski which allows of adjustment at will of the elasticity, and in consequence of the extent to which the heel can be raised.

Finally, the apparatus is completed by an expander constituted by a single rubber cord 54 passing around the pulleys 55 carried by the shackle 56 attached to the brackets 57 which are integral with the frame in such a manner that the rub-

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ber cord 54 extends around the frame, as shown in Figure 2, the extremities 58 of this cable being provided with the usual handle 59 which can be grasped by the user who can thus, in having his feet fixed to the blades 11, effect all the useful movements of the expander. The resistance of the expander can be increased by reducing the length of each of the free parts 58. It is sufficient for this purpose to attach the supplementary pulley 60 to a hook 61. Chain guards such as indicated at 62 are preferably provided in order to protect the user.

By reason of its reduced dimensions, the training apparatus may be inclined and even be vertically placed against a wall (a position in which it can be maintained by two eye bolts). The user can thus work in a standing position with the expander, or it will be even possible for him to carry out the movements of pedalling in a lying position, which movements are particularly recommended from a medical point of view for treatment of certain leg circulatory troubles.

Thus, as it will be readily understood, the apparatus so brought into effect determines the necessity of the user maintaining his equilibrium and therefore to pedal smoothly, which constitutes an excellent preparation particularly for skiing practice.

The user not being impeded in his movements by the presence of any seat or handle bar may then execute various movements of the trunk, such as lowering, twisting or complete bending.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A physical training apparatus comprising a flywheel rotating in a vertical plane and on an axis symmetrically arranged between two parallel axes each carrying one pair of bicycle-like pedal-

cranks, the two cranks on each side of the flywheel being interconnected by a rigid connecting element forming a foot platform, the cranks being connected to the flywheel to drive the latter.

2. A physical training apparatus comprising a frame upon which are mounted two pairs of cranks interconnected by two rigid foot platforms which are in the manner of connecting rods and are adapted to receive the feet of the user and in which a flywheel is mounted between the two pairs of cranks and is driven by the latter through the medium of chains.

3. A physical training apparatus comprising a frame upon which are mounted two pairs of cranks driving a flywheel and connected by two platforms adapted to receive the feet of the user and in which a blade forming a spring serves for securing the heel upon each of the platforms in order to allow the mobility of the heels vertically relatively to the said platforms, the said blades being adjustable in position upon the platforms in order to vary their effective elasticity.

4. A physical training apparatus comprising a frame upon which are mounted two pairs of cranks driving a flywheel and connected by two platforms adapted to receive the feet of the user and in which the frame having substantially the shape of a double T formed by two struts connected by two cross bars comprises brackets of fixation with pulleys in order to allow the combination of an expander with the apparatus.

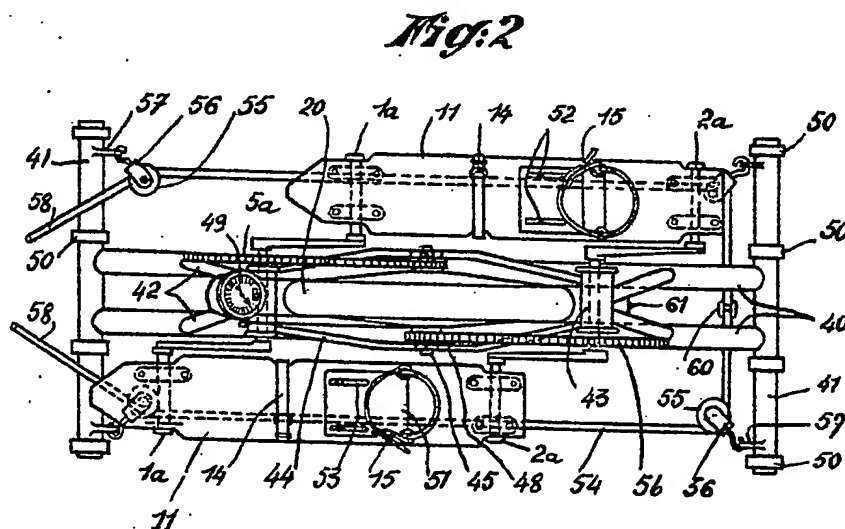
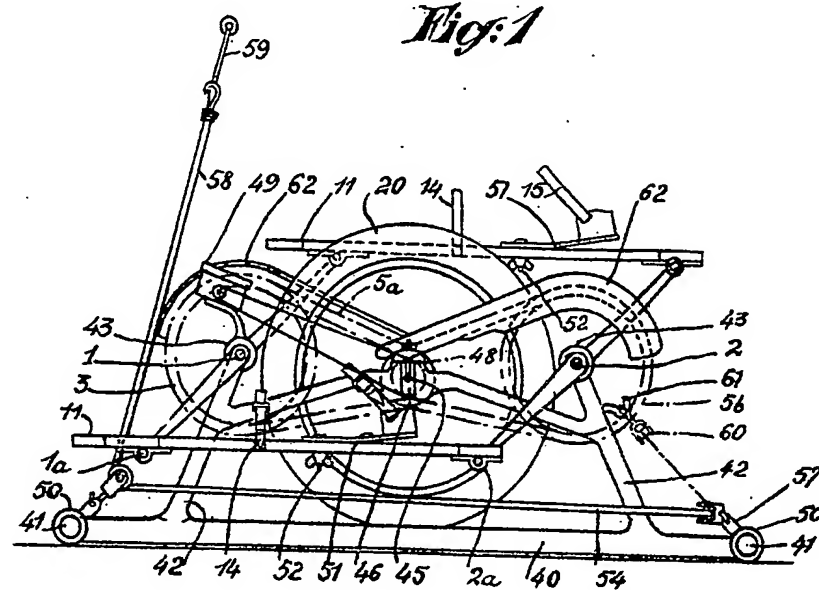
5. A physical training apparatus constructed substantially as described with the aid of the accompanying drawing.

Dated the 13th day of January, 1938.

For the Applicant:

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[This Drawing is a reproduction of the Original on a reduced scale.]



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